

REMARKS

Claims 4 and 5 stand rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. To overcome this rejection, taking into consideration the remarks of the Examiner in paragraph 2 of the rejection, claim 4 now specifically limits the reactor to comprising a reactor casing having an inlet end and an outlet end and at least one reaction tube disposed inside the reactor casing with the reaction tube being symmetrically spaced apart from the reactor casing and with the expression "with said lower end being in communication with the lower chamber in said reactor at an end thereof symmetrically opposite said upper chamber" removed from the claim. This overcomes the confusion raised by the Examiner regarding the interpretation of this expression. However, the expression "tube plates separating the reaction tube from the reactor casing" has been added to provide structure supporting the recitation that the reaction tube is symmetrically spaced apart from the reactor casing.

Reference number 6 denotes the inner tube as shown in Fig. 1 and reference number 7 denotes the central tube.

The amendments to claim 4 are deemed necessary in light of the Examiner's comments in paragraph number 2 of the official communication to overcome the rejection of claims 4 and 5 under 35 USC 112, second paragraph. Accordingly, this rejection should now be withdrawn.

The rejection of claims 4 and 5 as being unpatentable over Jaeger (USP 1,945,353) under 35 USC 103(a) is respectfully traversed.

Claim 4 as amended is now also limited to a single charge of granular catalyst stored in the first passageway forming the only catalyst charge in the reactor.

Many of the comments raised by the Examiner with regard to the disclosure of Jaeger '353 fails to take into consideration the fact that the reactor in Jaeger has two charges of granular catalyst with one stored in the reactor in a passageway of the reaction tube and a second charge of catalyst at the bottom end of the reactor. This is shown in each of the embodiments of Jaeger and forms a converter system having a plurality of catalyst zones in

separate locations within the reactor which is an entirely different arrangement from the reactor system of the present application.

Moreover, in claim 4 as now amended, the reaction tube is symmetrically spaced apart from the reactor casing by means of tube plates which is not taught or suggested in Jaeger. In the reactor design of applicant, boiling liquid is introduced into the inlet end of the reactor 1 between the confined space separated by the tube plates 4a and 4b which space the reactor tube symmetrically from the reactor casing and also provide for a fixed upper and lower chamber each defining a confined space of predetermined volume at symmetrically opposite ends of the reactor to facilitate a smooth flow of gas therethrough as is now clearly set forth in claim 4. It is this feature of claim 4, which results in a efficient configuration to enable the recovery of steam by eliminating heat. The confined volume of space in the upper and lower chamber does not inhibit the smooth flow of gas.

No comparison exists between the reactor system as claimed in claim 4 and the reactor system of Jaeger which requires a plurality of catalyst zones or converters at different locations in the reactor assembly with the lower zone forming a separate counter-current heat exchanger within the reactor.

In Fig. 1 of Jaeger, the Examiner has completely ignored the existence of the lower zone of catalyst which plays an integral part in the converter system in Jaeger. Since this is a rejection under 35 USC 103, it makes no sense to refer to the chamber 15 in Jaeger as the lower chamber of the reactor and to ignore the second zone of catalyst 9, representing the lower shell of the reactor which Jaeger refers to as being essential to form a counter-current heat exchanger defined by the open-end tubes 11, closed-end tubes 10 and manifold 13. This is also shown in the other embodiments of Jaeger. Accordingly, no analogy can be properly made between the operation of a multiple zone catalyst system as described in Jaeger and a single catalyst charged system as described in claim 4.

In addition, because of the existence of a separate catalyst zone, located below the catalyst charge in the reactor tube, all of the remarks of the Examiner concerning what would be obvious for determining the relationship of the length of the reactor tube at the lower end of the chamber also make no sense.

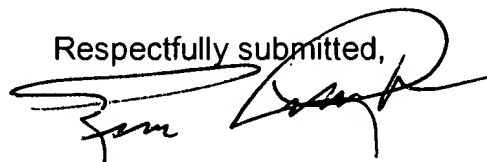
For all of the above reasons, claim 4 is clearly patentable over Jaeger '353 under 35 USC 103 and the rejection thereof should be withdrawn.

Should the Examiner continue to disagree, applicant respectfully requests that the Examiner permit applicant to conduct a telephone interview with the Examiner in connection with the dissimilarities between the catalytic apparatus of Jaeger which requires multiple catalyst zones and the reactor system of applicant.

Claim 5 is a dependent claim which depends from claim 4 and is believed patentable for the same reasons as given above.

Reconsideration and allowance of claims 4 and 5 is respectfully solicited.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 28, 2005.



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